Contents

		Page	
DIGEST		i	1/A6
CHAPTER			
1	INTRODUCTION	1	
	What is meant by proliferation?	1	
	Why are non-proliferation measures important?	2	
	The Nuclear Non-Proliferation Act of 1978	2	
	Objectives, scope, and methodology	4	
2	OVERVIEW AND PERSPECTIVE	11	
	Links between nuclear power and nuclear weapons	11	
	Evolution of U.S. nuclear non-proliferation strategy	14	
	Overall observations	22	
3	TITLE I--NO CHANGES NEEDED, BUT INTERNATIONAL FUEL CYCLE ASSURANCES HAVE NOT MATERIALIZED	24	
	More U.S. enrichment capacity is not now needed to meet foreign demand	24	
	International undertakings have not produced tangible results	30	
	U.S. offer to accept foreign spent fuel	34	
	Conclusions	36	
	Recommendation to the Secretaries of State and Energy	38	
	Recommendations to the Secretary of Energy	38	
	Recommendation to the Congress	39	
4	NO CHANGE NEEDED IN TITLE II, BUT INTERNATIONAL SAFEGUARDS NEED IMPROVEMENTS	40	
	IAEA safeguards and U.S. interest in them	40	
	Results of intensified U.S. effort to upgrade IAEA safeguards	41	
	Improvements needed in IAEA safeguards	44	
	Lack of consensus on common international sanctions	47	
	Efforts to improve physical protection are getting results	49	
	Reasonable approach to promote NPT adherence but mixed results	49	
	Conclusions	51	
	Recommendations	52	

CHAPTER		Page
5	NUMEROUS CHANGES ARE NEEDED TO MAKE NUCLEAR EXPORT REGULATORY CONTROLS AND PROCEDURES OF TITLE III WORK BETTER	54
	Steady improvement in export licensing processing time frames	55
	Ways to improve the export licensing process	56
	Need to clarify to what extent effectivenss of international safeguards should be considered in export licensing	64
	Elimination of double control over retransfers of previously exported nuclear materials	67
	Long-term policy needed for carrying out U.S. approval rights over foreign reprocessing and plutonium use	68
	Ways to improve controls over foreign commercial nuclear activities of U.S. firms and individuals	74
	Should NRC retain its nuclear export licensing functions?	77
	Conclusions	86
	Recommendation to the Secretary of State	87
	Recommendations to the Secretary of Energy	88
	Recommendations to the Congress	88
6	LIMITED PROGRESS IN RENEGOTIATING AGREEMENTS, BUT FEW CHANGES NEEDED IN TITLE IV	90
	Limited progress in overcoming foreign reluctance to renegotiate agreements	90
	Post-NNPA agreements generally comply with Title IV	99
	Limited progress in adopting common nuclear export policies	101
	Conclusions	102
	Recommendations to the Congress	104
7	TITLE V COULD BE DELETED WITHOUT NON-NUCLEAR ENERGY ASSISTANCE BEING AFFECTED	105
	Existing programs provide non-nuclear assistance	105
	Title V has not been implemented	107
	Conclusions	110
	Recommendation to the Congress	110

CHAPTER		Page
8	VARIOUS FACTORS INFLUENCE ADVERSE FOREIGN REACTION TO U.S. NON-PROLIFERATION STRATEGY	111
	Individual nation circumstances affect reaction	111
	Conclusions	119
9	NON-PROLIFERATION STRATEGY ADVERSELY AFFECTS NUCLEAR EXPORT SALES BUT IMPACT OF NNPA COULD NOT BE QUANTIFIED	120
	Impact of NNPA on industry export sales	121
	Other factors contribute to reduced U.S. nuclear exports	125
	Impact on industry generally perceived as negative	128
	Conclusions	130
10	OVERALL ASSESSMENT, AGENCIES' COMMENTS, AND RELATED ISSUES	131
	Limited short-term results	131
	Long-term prospects	133
	Related domestic issues	134
	Recommendation to the Nuclear Regulatory Commission	136
	Agency and other comments	136
APPENDIXES		
I	Text of Nuclear Non-Proliferation Act of 1978	139
II	List of Previous GAO Reports on Nuclear Non-Proliferation Issues	171
III	Consultants Contributing to GAO's Reviews on the Nuclear Non-Proliferation Act of 1978	173
IV	Companies Contacted During Assessment of the NNPA's Impact on Industry	174
V	IAEA's Financial Assessments for Safeguards	175
VI	Overview of the Approval Process for Export Licenses, Subsequent Arrangements, and Foreign Commercial Activities of U.S. Firms and Individuals	177
VII	How Agencies Determine Compliance with Statutory Export Licensing Conditions	186
VIII	Text of Suggested Legislative Amendments to the Nuclear Non-Proliferation Act of 1978	195
IX	Consultant Views and Our Analysis	201
X	Texts of Agencies' Comments	220
	Agency for International Development	220
	Arms Control and Disarmament Agency	222
	Nuclear Regulatory Commission	223
	Department of State	225

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JUN 3 1981

BY THE COMPTROLLER GENERAL

Report To The Congress

OF THE UNITED STATES

COMPLETED

The Nuclear Non-Proliferation Act Of 1978 Should Be Selectively Modified

The short-term impact of the Nuclear Non-Proliferation Act of 1978 in establishing an effective international framework for controlling the proliferation of nuclear explosive capabilities has been limited. However, it represents a long-term agenda requiring ambitious international initiatives which often take a long time to conclude. Although GAO does not believe that major changes should be made, it believes the Act should be selectively modified to

--conform with political, technical, and economic realities,

--obtain wider international acceptance,

--preserve the framework for curbing the inherent risks of weapons proliferation associated with peaceful nuclear cooperation, and

--improve executive branch implementation.

This report fulfills GAO's reporting mandate contained in the 1978 Act.

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COMPTROLLER GENERAL'S
REPORT TO THE CONGRESS

THE NUCLEAR NON-PROLIFERATION ACT OF 1978 SHOULD BE SELECTIVELY MODIFIED

D I G E S T

The Nuclear Non-Proliferation Act of 1978 represents an important step by the United States to establish a framework of controls and incentives that, if adopted internationally, could reduce the threat of weapons proliferation and promote the peaceful uses of nuclear energy. Along with executive branch non-proliferation policies, the Act's implementation has generated considerable negative reaction from foreign nuclear trading nations and the U.S. nuclear industry.

GAO believes the results of the Act have been limited to date, but, to demonstrate its leadership in addressing the proliferation problem, the United States should retain the law's goals and objectives. GAO also believes that amendments and other changes are needed to help the Act achieve wider acceptance, enhance international cooperation, and improve executive branch implementation.

The short-term impact of the Act's individual titles in achieving their objectives has been limited because the law has not been fully implemented or widely accepted abroad.

TITLE I

Title I states that, as a matter of national policy, the United States should take such actions and measures as are necessary to assure the availability of an adequate supply of nuclear fuel to those nations or groups of nations which adhere to efffective non-proliferation policies.

The nuclear fuel supply assurances are intended to function as a two-pronged incentive to (1) dissuade other nations from prematurely acquiring indigenous enrichment and/or reprocessing capabilities and (2) make the upgraded safeguards and nonproliferation commitments called for in other titles more acceptable.

GAO found that the assurances either are not much of an incentive to other nations or have not materialized.

Although the Department of Energy is constructing additional enrichment capacity, it is not apparent that such capacity is now needed to meet foreign demand, or to further U.S. non-proliferation objectives since a worldwide surplus is expected in the mid-1980s. Foreign concerns over U.S. reliability will not be solved by building additional uranium enrichment capacity. The Department believes the additional capacity is justified on an economic basis. However, still at issue are (1) whether the Department's projected cost savings in 1990 and beyond justify the large current investment in a period of intense budget scrutiny and fiscal restraint and (2) whether alternative actions that would permit a delay in this investment were fully and objectively considered.

With regard to the required international initiatives, such as the International Nuclear Fuel Authority, GAO found that limited progress has been made in this area. Although the International Atomic Energy Agency's Committee on Assurance of Supply is anticipated to address multinational nuclear fuel supply assurances, it seems that the United States is considered a "lukewarm" participant in this endeavor.

The Act also states that the executive branch should explore the establishment of international spent fuel repositories. While some discussions have taken place concerning an international facility, much more complicated and time consuming negotiations must take place before even the concept is approved--much less construction of a facility started.

A closely related issue concerns proposed international controls over plutonium. To reduce the proliferation risks created by scattered plutonium stockpiles, an international control system over excess plutonium is needed. Such a system does not exist. GAO believes the United States has been perceived

as placing less than its full weight behind the proposed international plutonium management and storage regime.

To provide certain nations with a credible alternative to reprocessing, the United States offered to accept limited quantities of foreign spent fuel for storage. The Act provides a mechanism to carry out this offer. However, the lack of follow-through over the last three years has demonstrated that the offer does not provide other nations a credible alternative. GAO believes the offer to accept foreign spent fuel should either be implemented or withdrawn.

TITLE II

Title II calls for U.S. contributions of financial, technical, informational, and other resources to assist the International Atomic Energy Agency in effectively implementing safeguards. GAO found that the intensified U.S. efforts to upgrade the Agency's safeguards have had some positive results, but have not yet had as significant an impact on safeguards in the field as had been hoped.

Title II also calls on the United States to seek to negotiate international principles and procedures to be followed in the event of diversion, theft, loss, or sabotage of nuclear materials, equipment, or technology. In addition, the Act states that U.S. policy is to strongly encourage adherence to the Non-Proliferation Treaty. GAO found that some progress has been made in the physical protection of nuclear material and increased Treaty adherence, but there seems to be little interest abroad in developing specific international sanctions.

In GAO's opinion, Title II represents a strong commitment to the international non-proliferation effort and no change to it seems necessary. However, international nuclear safeguards need improvement.

TITLE III

Title III establishes new regulatory controls over U.S. nuclear exports, and mandates new complex procedures in the way commercial nuclear export decisions are reviewed and approved by federal agencies, with provisions for oversight by the President and the Congress. (See p. 54.) The Title requires that the executive branch agencies determine that proposed exports will not be inimical to the common defense and security of the United States, and that the Nuclear Regulatory Commission must find that other specific statutory conditions and criteria are met before it can issue export licenses.

Title III also directs the executive branch and the Nuclear Regulatory Commission to adopt regulatory procedures to facilitate the timely processing of requests for export licenses. GAO found the following.

--About 85 percent of the licenses issued were considered minor exports and were issued in a timely manner.

--The vast majority of major exports (e.g., nuclear reactors and highly enriched uranium) were not issued in a timely manner, although the timeframes have improved.

--Most of the reasons that statutory time limits were not met related to the failure of recipients to comply with U.S. export conditions, certain nation-specific problems, or unresolved questions by one or more Government agencies about whether the proposed export meets U.S. export conditions.

--Greater use of streamlined licensing procedures, in recent months, have expedited the licensing process.

--Highly enriched research reactor fuel, initial core loads of low enriched power reactor fuel, and reactor exports continue to present Government agencies the greatest difficulties.

Although there is greater use of the streamlined procedures, more can and should be done to make Government non-proliferation reviews of export license applications more timely and predictable.

The executive branch has not developed a long-term policy for exercising U.S. approval rights over subsequent arrangements involving reprocessing and plutonium that balances major nuclear trading partners' desires for supply assurances with non-proliferation assurances required by Title III.

GAO believes that until the executive branch develops a long-term policy for carrying out U.S. approval rights over foreign reprocessing and plutonium use, the United States should continue its case-by-case review of subsequent arrangements involving reprocessing and plutonium use and maintain Title III's strict standards governing approvals. Much of the uncertainty presently associated with such approvals could be removed if the executive branch acted on foreign requests without U.S. trading partners having to demonstrate an imminent physical need.

In a prior report, GAO discussed significant problems in the Department of Energy's regulatory controls over nuclear technology exports and other unclassified foreign nuclear activities of U.S. firms and individuals. In this report, GAO presents specific actions the Congress should consider to make these controls more efficient and more effective.

The role of the Nuclear Regulatory Commission in the nuclear export licensing process has been a matter of considerable debate since the licensing regulatory functions were transferred to it in 1975. Initially the debate centered around the appropriateness of a regulatory agency, independent of presidential control, having a highly visible decisionmaking role in what essentially amounts to foreign policy and national security judgments. Concerns were also expressed that the Commission's addition to the export licensing process contributed to foreign customer perceptions that the United States was becoming an unreliable trading partner. In the aftermath

of the Three Mile Island accident, the focus of the debate shifted to whether the Commission's involvement in export licensing detracted from its primary mission of ensuring the safety of nuclear power in the United States.

GAO weighed arguments for and against the retention of this role. Specifically, the Nuclear Regulatory Commission, before issuing an export license, provides an independent review of an executive branch judgment that an export will not be detrimental to U.S. security. If the Commission decides not to issue a license, this could trigger direct involvement of the President and the Congress. GAO did not find sufficient justification to recommend removal of the Commission from the export licensing process given past indications of congressional intent and the Commission's recent performance.

GAO recognizes that this represents a legitimate national policy issue that the Congress may wish to reexamine. Therefore, the report discusses some alternatives.

TITLE IV

Title IV expands U.S. criteria for future agreements for peaceful nuclear cooperation and directs the President to attempt to change existing agreements to comply with the new criteria. Although the executive branch made an extensive attempt to renegotiate existing agreements and focused on nations likely to agree to the new conditions, much of the task has not been completed. There has been a general foreign reluctance to renegotiate and this effort has apparently contributed to strains in U.S. relations with some nuclear partners.

GAO believes that the United States should continue to explore the possibility of renegotiating existing agreements, when appropriate, and to require that agreements with new partners meet Title IV's criteria. However, the renegotiation efforts should be conducted in a manner sensitive to the attitudes and needs of cooperating partners, and the United States can continue to honor existing agreements. Moreover, the requirement that the President annually decide whether to extend the exemption allowing nuclear trade to continue with European allies may be an irritant that serves no useful purpose.

Title IV also directs the President to seek adoption of specified common nuclear export policies by all nations. Progress in promoting these policies has been limited, and none have been fully adopted by the world community.

Nevertheless, GAO believes the United States should continue to seek acceptance of upgraded common nuclear export policies.

Title IV requires an annual presidential review of the Act's agreement criteria and proposed common export policies to determine whether any should be applied as additional U.S. export licensing criteria. It seems questionable whether this provision is needed. This provision does not add to the President's power and may contribute to foreign concerns that U.S. nuclear export policies may become more stringent at any time.

TITLE V

Title V calls on the United States to assist developing nations, especially Non-Proliferation Treaty parties, in identifying and developing non-nuclear energy alternatives with emphasis on solar and other renewable energy sources.

No funds have been specifically appropriated or allocated for Title V programs, and it has not been used as justification for any ongoing or planned programs. In GAO's view the need for retaining Title V is dubious given that existing programs already provide such assistance.

IMPORTANT EVENTS SINCE THE ACT'S ENACTMENT

Since the Act's enactment in 1978 (1) no additional nations have acknowledged exploding a nuclear device; (2) 12 nations (including Egypt, Turkey, and Indonesia) have ratified the Non-Proliferation Treaty, raising to 112 the number of non-nuclear weapon nations that have pledged not to manufacture or acquire nuclear explosive devices; (3) Spain has moved toward placing all its nuclear activities under international safeguards; and (4) the predicted foreign drive to acquire enrichment and reprocessing capabilities has abated somewhat. However, whether, and to what degree, such positive events were influenced by U.S. policy and law is difficult to assess.

On the other hand, (1) some nations appear to be seeking a nuclear explosive capability (most notably Pakistan); (2) several non-nuclear weapon nations with whom the United States has civil nuclear agreements for cooperation, including India and South Africa, have not signed the Non-Proliferation Treaty or agreed to accept international safeguards on all their nuclear activities; and (3) other nations have made major export sales of sensitive nuclear technology and equipment despite U.S. objections. Whether, and to what degree, such negative events would have been different if the U.S. strategy and its implementation had been otherwise is also difficult to assess.

ADVERSE FOREIGN REACTION
AND IMPACT ON U.S. INDUSTRY

International cooperation is the key to the non-proliferation effort, but, with few exceptions, major nations have criticized the U.S. non-proliferation strategy. In developing this strategy, U.S. policymakers generally anticipated some of the concerns that other nations might have, but the extent and the tenacity of the overall negative foreign reaction was not anticipated. The factors influencing foreign reactions to the U.S. strategy vary widely and include energy, security, political, technical, and economic issues.

Initial reactions may not indicate the Act's eventual impact abroad because international initiatives often require much longer periods before completion and acceptance. Nevertheless, it may become increasingly difficult for the United States to overcome a continuing resistance to the U.S. non-proliferation policies.

The impact of the Act, per se, on the competitiveness of U.S. nuclear exports could not be specifically determined. This is not to say that the longer-term U.S. non-proliferation strategy has had no impact on nuclear exports.

U.S. Government officials, industry representatives, and foreign buyers have indicated that the U.S. non-proliferation strategy has had an effect in some foreign decisions to purchase from a non-U.S. company. But whether the Act, executive branch policies, financial considerations, type

of reactor or equipment, or some other factor was the principal reason is difficult to determine. In GAO's opinion, U.S. companies are at some disadvantage because importers perceive that implementation of certain aspects of the Act may adversely affect them.

LONG-TERM PROSPECTS

Despite the Act's limited impact to date, GAO does not believe that major revisions are warranted at this time for the following reasons.

First, the Act has only been in existence for 3 years and, since many international cooperative initiatives are required, it may be too soon to make a meaningful and objective assessment of its potential long-term impact. While international cooperation is the key to limiting proliferation, negotiating and consummating complex international cooperative agreements are arduous and time-consuming.

Second, although it is questionable whether one nation can single-handedly solve non-proliferation issues, the United States, especially through the Act, has heightened worldwide awareness to the dangers of proliferation. It represents an attempt to lay the foundation for an international framework of proliferation controls and cooperation. Although U.S. technological leadership may be challenged, the United States can still be an effective leader in working with other nations and through international organizations to limit the spread of nuclear weapons.

Third, the Act establishes a framework to control the potential links between civilian nuclear energy activities and nuclear weapons development. No such framework alone can provide an absolute guarantee of non-proliferation because civilian nuclear energy is but one of several routes to acquiring nuclear weapons. The technology and experience gained by many nations in conducting civilian nuclear energy programs have significantly lowered the technical barriers to weapons proliferation, so that the impact of any action by the United States, other nations, or groups of nations,

can only be measured in terms of incremental not absolute assurances. Nevertheless, there remains a need to secure incremental assurances that peaceful nuclear material will not be used to develop nuclear explosive capabilities. Although the control arrangements in the Act have to date not had an apparent impact on the most prominent cases of proliferation risks, they may become increasingly important as more nations develop civilian nuclear energy programs and thereby increase the potential for nuclear weapons development.

* * * * *

The remainder of this digest lists GAO's specific recommendations to the agencies and matters for congressional consideration. Page references to discussions in the text are provided. The text of GAO's draft bill amending the Act is contained in appendix VIII.

RECOMMENDATIONS TO THE SECRETARY OF STATE

The Secretary of State should

--in conjunction with the Secretary of Energy, vigorously pursue solutions to nuclear fuel supply assurances, international spent fuel management, and international plutonium management and storage. Active participation and support for the International Atomic Energy Agency committees on these matters would be an important part of that commitment.

--meet with other world leaders and International Atomic Energy Agency officials to address the problems impeding the effective application of international safeguards and to develop a multinational plan to overcome these problems. Renewed consideration should be given to how international safeguards should be financed, staffed, and provided with the necessary technical support.

--in consultation with the Secretary of Energy, the Director of the Arms Control and Disarmament Agency, and the Chairman of the Nuclear Regulatory Commission, review the direction and scope of the U.S. intensified efforts to improve international safeguards.

--improve the predictability and timeliness of the export licensing process for highly enriched uranium by (1) telling foreign governments, after appropriate consultations, which reactors merit continued U.S. supplies pending commercial availability of more proliferation-resistant fuels and (2) expediting the executive branch processing of export requests for presidential review.

RECOMMENDATIONS TO THE SECRETARY OF ENERGY

The Secretary of Energy, in conjunction with the Secretary of State, the Director of the Arms Control and Disarmament Agency, and the Chairman of the Nuclear Regulatory Commission, should

--assess the merits of continuing the U.S. offer to accept limited quantities of foreign spent fuel into the United States.

--revise executive branch export licensing procedures to allow generic recipient government assurances for repetitive exports.

--revise the policy to allow the executive branch to consider and act on foreign reprocessing requests without requiring the demonstration of physical need.

RECOMMENDATION TO THE NUCLEAR REGULATORY COMMISSION

Unless the Commission determines that it would be detrimental to U.S. national security interests, the Nuclear Regulatory Commission should resume decisionmaking proceedings on whether commercial reprocessing and the use of plutonium-bearing fuels should be permitted on a widescale basis in the United States from an environmental, health, safety, and safeguards standpoint.

RECOMMENDATIONS TO THE CONGRESS

To help improve the export licensing process, the Congress should amend the law to

--revise the licensing delay notification requirements to require the executive branch and the Nuclear Regulatory Commission to better account for licensing delays and inaction.

--state that it is U.S. policy to provide expedited review procedures for exports under new or renegotiated agreements for cooperation.

--exempt exports from complying with licensing criteria that do not conform with requirements of a new or renegotiated agreement for cooperation.

--transfer the Department of Energy's authority to approve all non-military Government exports of nuclear materials to the Nuclear Regulatory Commission.

--require the Nuclear Regulatory Commission to refer to the President for decision those export license applications which the Commission has had a favorable executive branch recommendation under review for at least 120 days, if the applicant requests such a referral.

To further help improve regulation of foreign commercial nuclear activities of U.S. firms and individuals, the Congress should amend the Act to require the Department of Energy to

--limit general authorizations of significant transfers of nuclear technology to those non-nuclear weapon nations that adhere to full-scope safeguards.)

--provide for the withdrawal of the Department's general authorizations in the event the President terminates other nuclear exports.

--allow the Secretary of Energy to delegate approval authority for granting U.S. firms and individuals authorizations for certain commercial nuclear activities abroad.

--to provide a better public accounting of authorizations granted.

The Congress should also

--when reviewing the Department of Energy's budget request for uncommitted increments of enrichment capacity, determine whether the

Department has adequately demonstrated that it fully and objectively considered (1) the option of postponing the current centrifuge construction program and (2) the feasibility of introducing the potentially more efficient and cost-effective advanced enrichment technologies.

--clarify to what extent the effectiveness of international safeguards should be considered by the Nuclear Regulatory Commission in export licensing.

--eliminate the need for an annual extension of the exemption to certain export licensing criteria provided to European allies.

--eliminate the annual presidential review of the agreement criteria and proposed common export policies to determine whether any should be applied as export licensing criteria.

--delete Title V.

AGENCY COMMENTS

The Departments of State and Energy, the Arms Control and Disarmament Agency, the Agency for International Development, the Nuclear Regulatory Commission, and the Office of Management and Budget were given the opportunity to comment on the draft of this report. However, because the current administration has not yet announced its non-proliferation policies, most of the comments were of a general nature and did not address the policy implications of GAO's recommendations.

Contents

CHAPTER		Page
DIGEST		i
1	INTRODUCTION	1
	What is meant by proliferation?	1
	Why are non-proliferation measures important?	2
	The Nuclear Non-Proliferation Act of 1978	2
	Objectives, scope, and methodology	4
2	OVERVIEW AND PERSPECTIVE	11
	Links between nuclear power and nuclear weapons	11
	Evolution of U.S. nuclear non-proliferation strategy	14
	Overall observations	22
3	TITLE I--NO CHANGES NEEDED, BUT INTERNATIONAL FUEL CYCLE ASSURANCES HAVE NOT MATERIALIZED	24
	More U.S. enrichment capacity is not now needed to meet foreign demand	24
	International undertakings have not produced tangible results	30
	U.S. offer to accept foreign spent fuel	34
	Conclusions	36
	Recommendation to the Secretaries of State and Energy	38
	Recommendations to the Secretary of Energy	38
	Recommendation to the Congress	39
4	NO CHANGE NEEDED IN TITLE II, BUT INTERNATIONAL SAFEGUARDS NEED IMPROVEMENTS	40
	IAEA safeguards and U.S. interest in them	40
	Results of intensified U.S. effort to upgrade IAEA safeguards	41
	Improvements needed in IAEA safeguards	44
	Lack of consensus on common international sanctions	47
	Efforts to improve physical protection are getting results	49
	Reasonable approach to promote NPT adherence but mixed results	49
	Conclusions	51
	Recommendations	52

CHAPTER		Page
5	NUMEROUS CHANGES ARE NEEDED TO MAKE NUCLEAR EXPORT REGULATORY CONTROLS AND PROCEDURES OF TITLE III WORK BETTER	54
	Steady improvement in export licensing processing time frames	55
	Ways to improve the export licensing process	56
	Need to clarify to what extent effectivenss of international safeguards should be considered in export licensing	64
	Elimination of double control over retransfers of previously exported nuclear materials	67
	Long-term policy needed for carrying out U.S. approval rights over foreign reprocessing and plutonium use	68
	Ways to improve controls over foreign commercial nuclear activities of U.S. firms and individuals	74
	Should NRC retain its nuclear export licensing functions?	77
	Conclusions	86
	Recommendation to the Secretary of State	87
	Recommendations to the Secretary of Energy	88
	Recommendations to the Congress	88
6	LIMITED PROGRESS IN RENEGOTIATING AGREEMENTS, BUT FEW CHANGES NEEDED IN TITLE IV	90
	Limited progress in overcoming foreign reluctance to renegotiate agreements	90
	Post-NNPA agreements generally comply with Title IV	99
	Limited progress in adopting common nuclear export policies	101
	Conclusions	102
	Recommendations to the Congress	104
7	TITLE V COULD BE DELETED WITHOUT NON-NUCLEAR ENERGY ASSISTANCE BEING AFFECTED	105
	Existing programs provide non-nuclear assistance	105
	Title V has not been implemented	107
	Conclusions	110
	Recommendation to the Congress	110

CHAPTER		Page
8	VARIOUS FACTORS INFLUENCE ADVERSE FOREIGN REACTION TO U.S. NON-PROLIFERATION STRATEGY	111
	Individual nation circumstances affect reaction	111
	Conclusions	119
9	NON-PROLIFERATION STRATEGY ADVERSELY AFFECTS NUCLEAR EXPORT SALES BUT IMPACT OF NNPA COULD NOT BE QUANTIFIED	120
	Impact of NNPA on industry export sales	121
	Other factors contribute to reduced U.S. nuclear exports	125
	Impact on industry generally perceived as negative	128
	Conclusions	130
10	OVERALL ASSESSMENT, AGENCIES' COMMENTS, AND RELATED ISSUES	131
	Limited short-term results	131
	Long-term prospects	133
	Related domestic issues	134
	Recommendation to the Nuclear Regulatory Commission	136
	Agency and other comments	136
APPENDIXES		
I	Text of Nuclear Non-Proliferation Act of 1978	138
II	List of Previous GAO Reports on Nuclear Non-Proliferation Issues	171
III	Consultants Contributing to GAO's Reviews on the Nuclear Non-Proliferation Act of 1978	173
IV	Companies Contacted During Assessment of the NNPA's Impact on Industry	174
V	IAEA's Financial Assessments for Safeguards	175
VI	Overview of the Approval Process for Export Licenses, Subsequent Arrangements, and Foreign Commercial Activities of U.S. Firms and Individuals	177
VII	How Agencies Determine Compliance with Statutory Export Licensing Conditions	186
VIII	Text of Suggested Legislative Amendments to the Nuclear Non-Proliferation Act of 1978	195
IX	Consultant Views and Our Analysis	201
X	Texts of Agencies' Comments	220
	Agency for International Development	220
	Arms Control and Disarmament Agency	222
	Nuclear Regulatory Commission	223
	Department of State	225